1857 Maranville Coin Tester – Background
This type of scale is also known as a Counterfeit Coin Detector (CCD)

Harvey Maranville invented the first of his three coin testers in 1857 while he was living in Clinton, Ohio. His second coin tester was also invented in Clinton, Ohio in 1860 before he moved to Akron, Ohio in 1861 where he invented his third coin tester in 1878.

Newman and Mallis describe these three coin testers in their book ***U.S. Coin Scales and Mechanical Counterfeit Coin Detectors*** (1999 - Lib of Congress Cat No. 91-091329, pages IV-4-1 to IV-4-4). Newman and Mallis dedicated their book to the International Society of Antique Scale Collectors and Michael A. Crawforth. Newman and Mallis were members of: The International Society of Antique Scale Collectors (ISASC); American Numismatic Society; and American Numismatic Association.

The International Society of Antique Scale Collectors (ISASC) assisted further research into the three Maranville coin testers via an email sent to all ISASC members seeking photos of examples in personal collections. The author is grateful for the ISASC member responses.

The Eric P. Newman Numismatic Education Society (EPNNES) based at Washington University in St Louis awarded an inaugural Newman Numismatic Grant to the author to research the three Maranville coin testers. The author is grateful for the opportunity to tour U.S.A inspecting examples of all three versions of Maranville's coin testers.

The author of these articles is very aware of the previous ground-breaking work of Newman and Mallis, and grateful for the opportunity to learn and document more of this interesting stage in American numismatic history which was intertwined with broader American history.

The author considered the different audience reading about Maranville, and how to best organise the information for the different purposes that scale collectors, numismatists and/or historians might wish to access. For this reason, the Maranville story is told in six parts:

Descriptive 1857 Maranville Article	1857 Maranville Pictorial Census
Descriptive 1860 Maranville Article	1860 Maranville Pictorial Census
Descriptive 1878 Maranville Article	1878 Maranville Pictorial Census

Maranville's first coin tester in 1857 was a pocket-sized brass device with a sliding brass beam in a small box. It was designed to check both US and Foreign coins – silver and gold.

Newman and Mallis described the 1857 coin tester as:
Brass, sheet metal pan and fixed arm with a sliding arm that slides into the fixed arm. The sliding arm is marked into four columns with incremental markings to weigh foreign gold and silver coins on two columns and United States gold and silver coins on the remaining two columns. The pan on the fixed arm has graduated notches on the raised edges to measure the thickness of the coin. Partial circles on the face of the pan indicate the diameter of the coin in question. The device sits on a small metal base that forms the bearing points of the knife edges on the fixed arm.
This detector was stamped on the reverse side of the long arm Made By C. E. STAPLES, Worcester, Mass. and H. Maranville's PATENT JAN 12. 1857 Clinton O. The device in its closed position measures 3 ¾ inches (83 mm) in length and 4 ¾ inches (120 mm) when fully

extended to weigh a $20 U.S. gold coin. The beam is 1 inch (25 mm) wide and the pan which holds the coins is circular, with a diameter of 1 7/8 inches (48 mm).

Newman and Mallis went on: *There is, currently no known box for this device.*
Source: Newman, Eric P. and Mallis, A. George, 1999, ***U.S. Coin Scales and Mechanical Counterfeit Coin Detectors***, CHP. IV: SEC. 4: P 1 [IV-4-1]

The tour of USA sponsored by EPNNES uncovered two different versions of the original box for the 1857 Maranville coin tester held by collectors – one blue; one brown; both with the same printed inscription on the lid of the box; both previously unknown to Newman and Mallis.

H. MARANVILLE'S

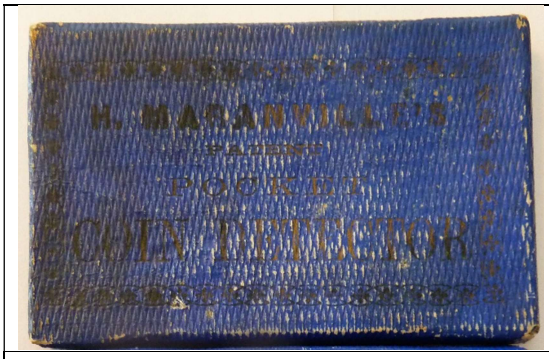
PATENT

POCKET

COIN DETECTOR

Original brown box for 1857 Coin Tester

B 32 – B 32: ISASC Member Collection



Original blue box for 1857 Coin Tester

40 – 40: Dan Hamelberg Collection

Original boxes in both brown and blue – the print style appears to be identical on both. Perhaps different coloured boxes were used with different production batches of 100.

1857 Maranville Coin Tester by Malcolm H Mathias

1857 Maranville – Actual size (115 mm long when beam extended to $1 position)
No 7: Bill James Collection

A genuine coin must satisfy three tests – weight, diameter and thickness.
The 1857 provides tests for these three dimensions:

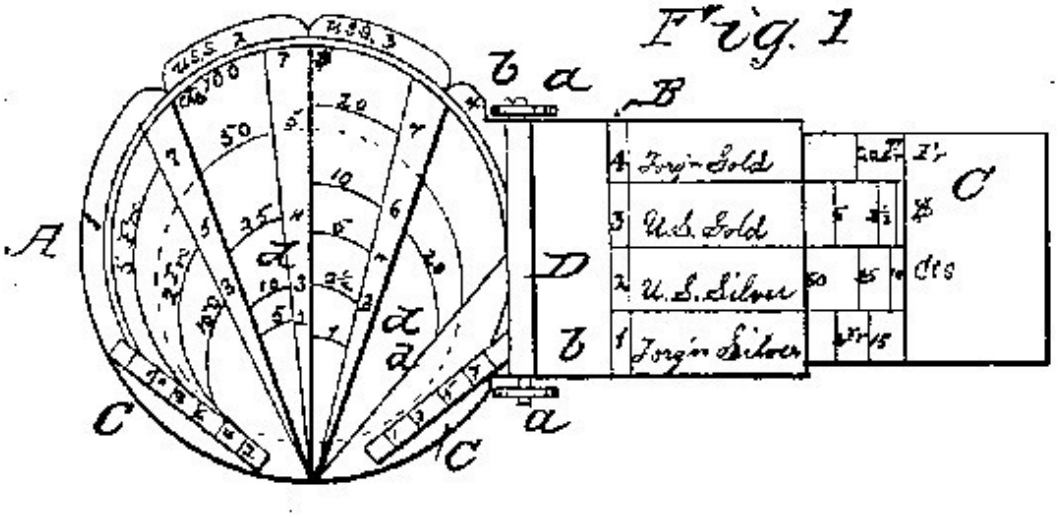
1. The expected diameter is marked for each coin value (e.g.: US $1) on the pan area.
2. Thickness is tested against marks on the inclined front ledges.
3. The beam is extended to the mark for the coin being weighed, and it should balance.

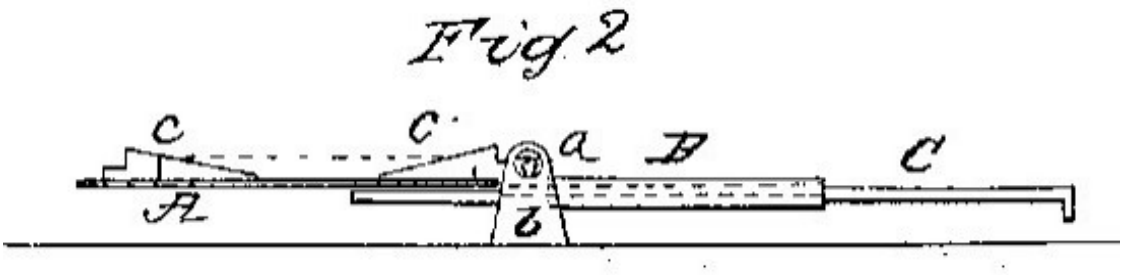
Harvey Maranville patented his new coin tester on January 13, 1857. Maranville described the use of the coin tester in his Patent application:

> *The implement is used as follows: Take, for instance, a silver dime, and place it upon the disk, A, the edge of the dime being placed against the ledges (c) (c). Then adjust the slide C, so that the line marked 10 in the part marked "cts.," on the slide will be even with the outer edge of the plate B. If the coin be genuine its edge will be precisely over the line marked 10 in the disk, and the disk and slide will be evenly balanced. The thickness of the coin is indicated by figures on the ledges (c), the ledges being of taper or inclined form.*

The full text of the Patent is reproduced below.

H. MARANVILLE. Coin Tester.
Patented No. 16,390 on Jan. 13, 1857





UNITED STATES PATENT OFFICE.
H. MARANVILLE, OF CLINTON, OHIO.
BALANCE FOR DETECTING COIINTERFEIT COINS.
Specification of Letters Patent No. 16,390. Patented Jan: 13, 1857.

To all whom it may concern:

Be it known that I, H. MARANVILLE, of Clinton, in the county of Summit and State of Ohio, have invented a new and Improved Implement or Device for Detecting Counterfeit Coins; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which –

Figure l is a face view of my improvement. Fig. 2 is a side view of ditto.

Similar letters of reference indicate corresponding parts in the two figures.

My invention consists in the employment or use of a graduated disk and slide, connected together and hung upon centers, so as to form a scale beam. The disk has guides attached to its face and the several parts are so arranged that the coin may be weighed and also measured both as regards thickness and diameter, and the implement may be made quite portable so that it may be carried in the pocket with as little inconvenience as an ordinary pocketknife or comb.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a disk or circular plate, to one side of which a projecting plate B is attached. The sides or edges of the plate B are bent downward and underneath the other portion to form guides to receive a sliding plate C which is allowed to work freely in said guides underneath the disk A and plate B. The disk A and plate B may be formed of sheet brass or other metal and both cut out of one piece. The disk A need not much exceed in diameter a silver dollar. The slide C is also formed of a piece of sheet metal. On the plate B at its junction with the disk A, a bar D is secured transversely, and knife edged journals (a) are formed one on each side of said bar. These journals (a) have their bearings in ears or lugs (b) turned up at the end of a bar underneath the plate B. On the face of the disk A there are secured two ledges (c) (c). These ledges are placed in oblique positions near the edge of the disk and form guides against which the edge of the coin to be tested is placed. The disk A has its face graduated as shown in Fig. 1- curved lines being made indicating the diameter of gold and silver coins of different denominations. The different scales are divided by lines (d).

The slide C is divided longitudinally into four parts, each part being graduated, one part for silver and another for gold, a part for foreign silver and the other part for foreign gold. The disk and slide are balanced like a scale beam in the bearings in the lugs (b) and the weight of the coin on the disk A is counterbalanced by adjusting the slide C.

The implement is used as follows: Take, for instance, a silver dime, and place it upon the disk, A, the edge of the dime being placed against the ledges (c) (c). Then adjust the slide C, so that the line marked 10 in the part marked "cts.," on the slide will be even with the outer edge of the plate B. If the coin be genuine its edge will be precisely over the line marked 10 in the disk, and the disk and slide will be evenly balanced. The thickness of the coin is indicated by figures on the ledges (c), the ledges being of taper or inclined form. It will be seen that by the above implement the coins are weighed and measured, and therefore counterfeit coin may be readily detected. If a spurious coin is of the same weight as a genuine one it must be larger, because any known metal heavier than gold is more valuable and consequently would not be used in combination with other metals for counterfeiting. If a spurious coin is equal in size to a genuine one it will, of course, be of less weight.

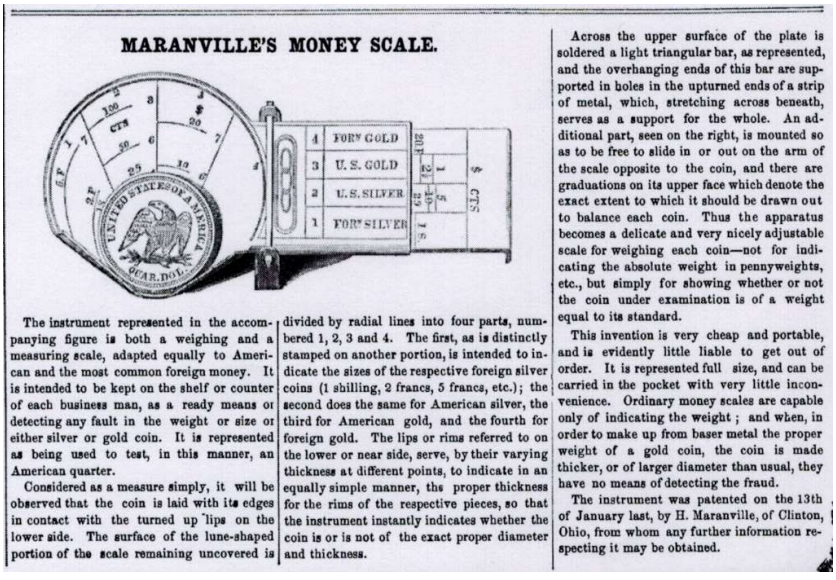
The implement is exceedingly simple in construction and may be made quite portable, not exceeding 3 or 4 inches in length.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is –

> The graduated disk A and slide C connected as shown and hung in the ears or lugs (b), the disk having ledges or guides (c) (c) attached to its face and the whole arranged as herein shown and described, for the purpose set forth.

H. MARANVILLE.
Witnesses: J. F. GILBERT, I. I. WRIGHT.

Scientific American heralded the arrival of Maranville's Money Scale on the front page of their August 22, 1857 edition (Volume XII, Number 50).



MARANVILLE'S MONEY SCALE.

The instrument represented in the accompanying figure is both a weighing and a measuring scale, adapted equally to American and the most common foreign money. It is intended to be kept on the shelf or counter of each business man, as a ready means of detecting any fault in the weight or size of either silver or gold coin. It is represented as being used to test, in this manner, an American quarter.

Considered as a measure simply, it will be observed that the coin is laid with its edges in contact with the turned up lips on the lower side. The surface of the lune-shaped portion of the scale remaining uncovered is divided by radial lines into four parts, numbered 1, 2, 3 and 4. The first, as is distinctly stamped on another portion, is intended to indicate the sizes of the respective foreign silver coins (1 shilling, 2 francs, 5 francs, etc.); the second does the same for American silver, the third for American gold, and the fourth for foreign gold. The lips or rims referred to on the lower or near side, serve, by their varying thickness at different points, to indicate in an equally simple manner, the proper thickness for the rims of the respective pieces, so that the instrument instantly indicates whether the coin is or is not of the exact proper diameter and thickness.

Across the upper surface of the plate is soldered a light triangular bar, as represented, and the overhanging ends of this bar are supported in holes in the upturned ends of a strip of metal, which, stretching across beneath, serves as a support for the whole. An additional part, seen on the right, is mounted so as to be free to slide in or out on the arm of the scale opposite to the coin, and there are graduations on its upper face which denote the exact extent to which it should be drawn out to balance each coin. Thus the apparatus becomes a delicate and very nicely adjustable scale for weighing each coin—not for indicating the absolute weight in pennyweights, etc., but simply for showing whether or not the coin under examination is of a weight equal to its standard.

This invention is very cheap and portable, and is evidently little liable to get out of order. It is represented full size, and can be carried in the pocket with very little inconvenience. Ordinary money scales are capable only of indicating the weight; and when, in order to make up from baser metal the proper weight of a gold coin, the coin is made thicker, or of larger diameter than usual, they have no means of detecting the fraud.

The instrument was patented on the 13th of January last, by H. Maranville, of Clinton, Ohio, from whom any further information respecting it may be obtained.

The full text of the Scientific American article is reproduced below.

Maranville's Money Scale

The instrument represented in the accompanying figure is both a weighing and a measuring scale, adapted equally to American and the most common foreign money. It is intended to be kept on the shelf or counter of each business man, as a ready means of detecting any fault in the weight or size of either silver or gold coin. It is represented as being used to test, in this manner, an American quarter.

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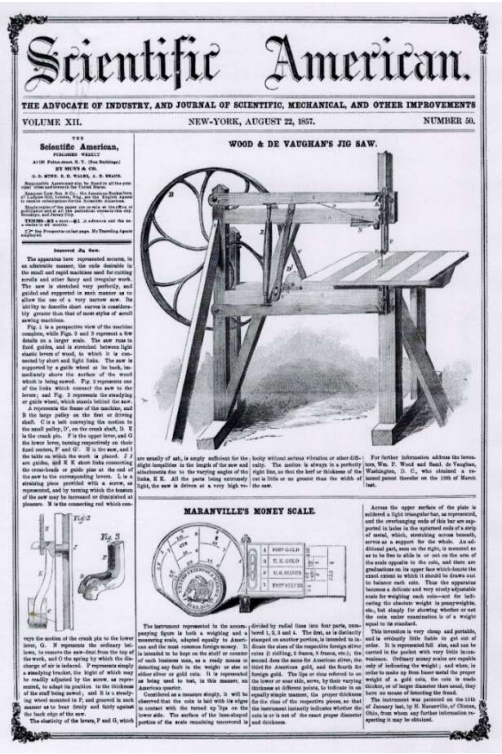

Scientific American.

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL, AND OTHER IMPROVEMENTS

VOLUME XII. NEW-YORK, AUGUST 22, 1857. NUMBER 50.

WOOD & DE VAUGHAN'S JIG SAW.

MARANVILLE'S MONEY SCALE.

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Who was Harvey Maranville?

Harvey Maranville was a prominent citizen in both Clinton, Ohio from 1833 to 1861, and later in Akron, Ohio from 1861 to 1889. The length and detail of his obituary in the *Summit County Beacon* newspaper commemorated the significant parts he played in this early period of Ohio History:

55 YEARS A SUMMITONIAN - DEATH OF HARVEY MARANVILLE

After many years' intense suffering from bladder complications, Akron's well-known citizen, Harvey Maranville, Esq., peacefully passed away at 3:15P.M., Saturday, January 12, 1889. The deceased was born at Poultney, Vermont, March 19, 1812, his age at death being 76 years, 9 months and 23 days.

Settling in the village of Clinton, in what is now Summit County, in the Fall of 1833, he devoted his Winters to teaching and his Summers to the carpenter's trade, building many of the early bridges across the numerous streams in that vicinity; also, having studied civil engineering, devoting considerable time to surveying in that vicinity.

For many years, Mr. Maranville held the office of Justice of the Peace of Franklin township, acquiring an enviable reputation for the soundness of his judicial rulings and judgements.

Removing to Akron in 1861, in 1863 he was appointed, under the United States Internal Revenue system, Inspector and Gauger of distilled and malt liquors and illuminating oils, for Summit County, being one of the most efficient and conscientious officers in the service, and holding the position until this sub-district was abolished, about seven years ago.

November 1, 1837, the deceased was married to Miss Nancy Harbaugh, of Lawrence township, Stark County, Ohio, who died December 18, 1886, at the age of 70 years, 10 months and 21 days.

They were the parents of 10 children, six of whom survive:

- *Frank Maranville, of Clinton, Ohio;*
- *Mrs Emily Updike and Esther Maranville, of Lake City, Mich.*
- *Mrs Bloomy McCormick, of Millersburg, Ohio;*
- *Harvey Maranville, Jr., and*
- *Mrs Amelia Latimer, of Akron,*

with thirteen grandchildren and one great-grand child – Clarence Harvey, the three months' old son of Harvey Franklin Maranville, of Akron.

The grandfather of the deceased was a soldier in the Revolutionary war; his father a soldier in the war of 1812; himself enlisting for the Mexican war, which closed before he was called into service, and furnishing two sons for the war of the Rebellion, one of whom – Jay Maranville, Co. H, 104th O.V.I. – died in the service, at Strawberry Plains, Tenn., January 12, 1864.

Funeral at the family residence, 105 Wood Street, Tuesday, January 15, at 10 o'clock A.M.

Source: Obituary, *The Summit County Beacon*, Akron, Ohio, Mon Jan 14, 1889, p4

Harvey Maranville lived in what is now known as Rhoads-Harter House at 7866 Main Street Clinton, before moving to Akron, Ohio in 1861.

	Built in 1847, this unique Gothic Revival home was considered one of the finest of its time. It is listed as a Summit County Underground Railroad site on the well-travelled "Chestnut Ridge Track," which crossed the township, assisting runaway slaves on their way to Canada and to freedom. In 1874, Pearson Rhoads, a Civil War veteran of Andersonville prison, and his wife Sara Jane Foltz purchased the home. They raised eight children in a loving, religious environment. The home now serves as a museum depicting family life in the canal villages.
RHOADS-HARTER HOUSE 7866 Main St. Clinton, OH, 44216	Source: www.ohioanderiecanalway.com

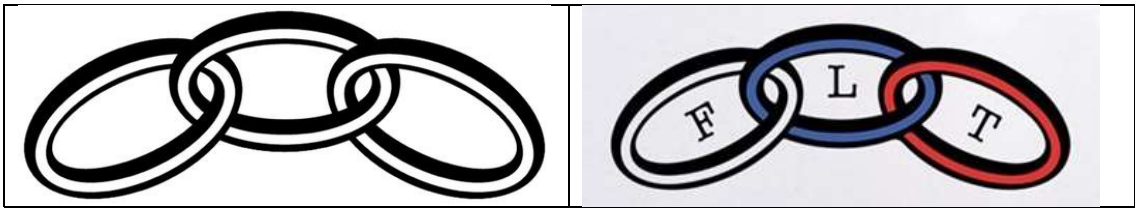
The Rhoads-Harter House is now owned and operated by the Clinton Historical Society.

Prior to 1860, a well-travelled line of underground railroad crossed the Clinton township, being confined to what is known as the Chestnut Ridge, with occasional side-tracks. Prominent officials on this road were Alexander Russell, James Hile, Harvey Maranville, Washington Heffleman and George Wirt. These men lost no opportunity of assisting runaway slaves to Canada. On one occasion, Messrs. Russell and Maranville were notified that five slaves – two women and three men – were west of Clinton, in the heavy woods on Chestnut Ridge waiting for food and clothing. They were accordingly supplied and directed on their course to the next station. On another occasion, a settler in the township who had come from Kentucky, seeing a negro travelling northward through the woods with a gun on his shoulder, ran after him and took away the gun, saying as he did so, “It’s against the law for nig’s to carry a gun.” Two or three of the men mentioned above informed this settler to return the gun to the negro immediately, or trouble would ensue, whereupon the fellow reluctantly did so. When questioned as to where the gun was obtained, the negro replied that “Massa Wales”, of Massillon, had given it to him to kill partridges and other game, upon which to subsist while travelling North. Wales was probably train-despatcher on this road. He was a good one, and no collision has since been computed to his fault. (Perrin, William H. 1881, ***History of Summit County***, Chicago, Basken & Battey, p.634).

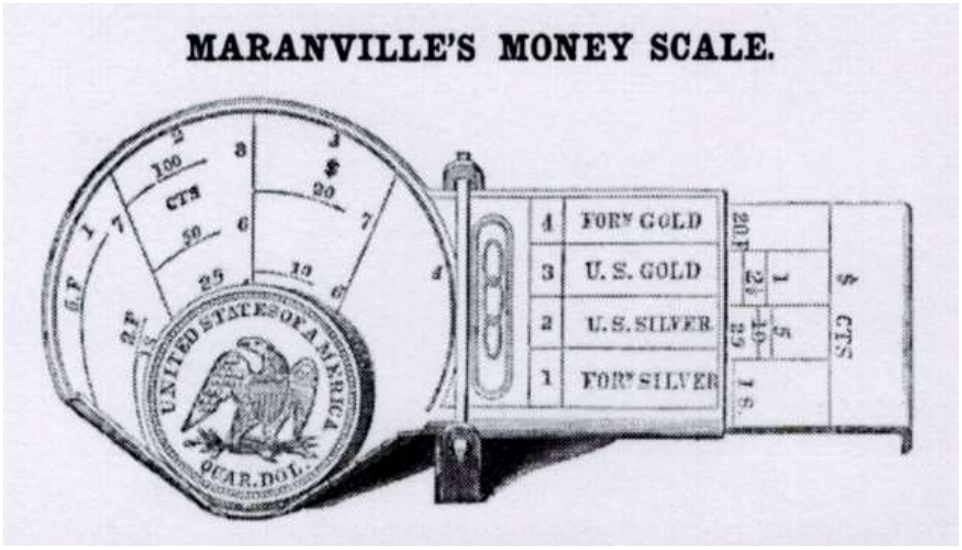
Somewhere amid being a carpenter building bridges, a part time teacher, and carrying out his duties as Justice of the Peace of Franklin township, Harvey Maranville found the time to invent his 1857 Coin Tester.

The Independent Order of Odd Fellows (IOOF) is a non-political and non-sectarian international fraternal order of Odd Fellowship. The order is also known as the Triple Link Fraternity, referring to the order's "Triple Links" symbol, alluding to its motto "Friendship, Love and Truth". The three-ring chain included as part of the design of the 1857 Maranville

Coin Tester appears closely similar to one of the symbols used by the Independent Order of Odd Fellows founded in 1819 by Thomas Wildey in Baltimore, Maryland, United States.



Harvey Maranville was probably a member of the Independent Order of Odd Fellows (IOOF). Maranville's involvement in the underground railway is consistent with the IOOF motto "Friendship, Love and Truth." The "Triple Links" symbol is part of the design near the balance point of Maranville's 1857 Coin Tester.



Scientific American, Volume XII, Number 50, August 22, 1857, page 1

No 39 Larry Press Collection

All "known" examples of the 1857 Maranville Coin Tester are identified by numbers on both the back of the pan, and again on the back of the sliding beam. The sliding brass beam also carries Maranville's name, the Patent date and the maker's details – C.E.Staples of Worcester, Massachusetts.

The numbers are probably identifiers marked during manufacture to identify "matching parts" for the pan and the beam. The matching was necessary to ensure that the coins balanced at the points marked on the sliding beam. If the coin tester did not balance after manufacture, there was probably some adjustment in the weight of the beam by filing the rounded end of the beam to suit. Once the required balance was achieved, the two parts were probably numbered with matching numbers to ensure they stayed together for later sale.

Who was Charles E Staples?

Maranville invented his 1857 Coin Tester in Clinton, Ohio but had it made by Charles Staples many miles away in Worcester, Massachusetts. There were no railways in Ohio until the early 1870s. It was the era of wagon trains heading west to open new country for European settlers. Why did Maranville choose to have his 1857 Coin Tester made by Charles E Staples who worked 600+ miles away in Worcester, Massachusetts?

The answer to this question probably has three components:

1. The Ohio-Erie Canal
2. Worcester Industry was known for "precision engineering."
3. Maranville - born in Poultney, Vermont had trained as an engineer and arrived in Clinton in 1833 just after the completion of the Ohio-Erie canal.

The Ohio-Erie Canal

George Washington first proposed the idea of a canal connecting the Great Lakes to the Ohio-Mississippi River System in 1784. Inspired by the Erie Canal in New York, the State of Ohio began surveying routes in 1822 for its own grand internal improvement project. Completed to Portsmouth a decade later (October 15, 1832), the 309-mile-long Ohio and Erie Canal connected Cleveland, Akron, Massillon, Dover, Roscoe, Newark, Columbus, Circleville, Chillicothe, Waverly, and Portsmouth. Success was immediate, as this vital transportation link provided access to Eastern markets. Within a span of 35 years, canals transformed Ohio from a rural frontier wilderness into the nation's leader in agricultural output and third most populous state by 1860. Railroads marked the end of the canal as an economic engine, but traffic continued to operate until the Great Flood of 1913 destroyed the system as a commercial enterprise.
Today, the Ohio and Erie Canal is enjoying a rebirth as a recreational resource.
Source: Triplett, Boone, 2014, ***Ohio and Erie Canal***, Images of America Series, Arcadia Publishing

Towns along the Ohio and Erie Canal on the 54-mile-long Upper Tuscarawas Valley section include Clinton, Canal Fulton, Massillon, Navarre, Bolivar. Zoar, Dover, Southside (New Philadelphia), Oldtown, New Castle, and Goshen. (Triplett, *Ohio & Erie Canal*, p49).

The work on the Ohio Canal began in 1825 and many came to Clinton – doctors, lawyers, merchants, farmers, millers, tinsmiths, tailors, shoemakers, carpenters, warehousemen,

preachers, and teachers. Most were of German and Pennsylvanian Dutch origin. Some were English. On June 27, 1827 the canal boat "The Ohio" was the first to navigate the canal. (Dreurey, S. W., 1991, *The Clinton Story*, Clinton, OH., Clinton Historical Society, p.2)

Clinton's growth paralleled the opening of the Ohio and Erie Canal. John Bradford built the first hotel in Clinton in 1825 to accommodate canal labourers constructing the Ohio and Erie Canal. The Bradford (Union) Hotel was located on the south side of Main Street and remained there until fire destroyed the building in 1935. (Tamburro, Sam, 1999, *Canal, Railroad, and Industrial Resources of the Village of Clinton/Warwick*, Sect E, p.8)

High overland transportation prices prevented many from getting their products to market. With the building of the canal, freight prices became more reasonable and products could be sent many miles and still be profitable. Because of the many markets made available by canal transportation the prices of wheat went from twenty-five cents to one dollar a bushel. Potatoes that could hardly be given away went to forty cents a bushel. (Dreurey, S. W., 1991, *The Clinton Story*, Clinton, OH., Clinton Historical Society, p.2)

Clinton is named for the "Father of the Erie Canal," New York governor DeWitt Clinton (Triplett, *Ohio & Erie Canal*, p50).

Clinton served as the main marketplace for the area farmers from Stark, Wayne, and southern Medina Counties. The main crop sold in the community was grain. According to the 1850 U.S. Census *Productions of Agriculture Schedule*, 155 Franklin farmers produced a total of 38,416 bushels of wheat, 33,385 bushels of Indian corn, and 20,695 bushels of oats. (Tamburro, Sam, 1999, *Canal, Railroad, and Industrial Resources of the Village of Clinton/Warwick*, Sect E, p.8)

Worcester Industry

A combination of inventive genius and forward-thinking entrepreneurs laid the foundation of a diverse industrial economy in Worcester after 1825, overcoming the geographic location and lack of waterpower that made an unlikely place for an industrial city. The Blackstone Canal linked Worcester and Providence in 1828, and the railroads first opened between

Worcester and Boston in 1835. The transportation improvements made Worcester a crossroads and offered the possibility of large-scale manufacturing for distant markets.

Local entrepreneurs Stephen Salisbury II and William T. Merrifield began to build factories and to rent space with power to new manufacturers. These factories were a major reason for Worcester's growing diversity as well as its climate of innovation. They made it possible for mechanics to go into business cheaply and created an environment that encouraged risk-taking. Many skilled workers took advantage of the opportunity to start small firms of their own after periods of training in local shops.

Source: http://www.worcesterhistory.org/worcesters-history/worcester-in-the-19th-century/industrialization/

In the early 1800s, inventive machine builders and far-sighted investors laid the foundations for Worcester's industrial success. Inventive mechanics like Ichabod Washburn also played a central role in the changing economy of nineteenth-century Worcester. Washburn founded a wire-making firm in 1831 that became the largest in the nation. He devised new wire-drawing processes that led to exponential increases in output. Washburn and other successful manufacturers became influential members of the community as they became employers of large numbers of men and women.

Transportation improvements were critical to making Worcester an Industrial city. Irish labourers completed the Providence-to-Worcester Canal in 1828 and the Boston-to-Worcester railroad in 1835. The new transport routes made it possible for local manufacturers to obtain raw materials and ship finished goods relatively cheaply and in large quantities. By the 1850s, the city had become a hub in the regional rail, system, giving Worcester businessmen a cost advantage over outlying competitors. With these developments Worcester, formerly a farming community, became an industrial boom town.

The opening of Mechanics Hall in 1857 symbolized the growing social influence of manufacturers and a new sharing of power with the older elite of bankers, traders, and lawyers. By the time of the Civil War, Worcester was considered a "paradise for mechanics."

1857 Maranville Coin Tester by Malcolm H Mathias

Worcester emerged as a centre of manufacturing more than 150 years ago. From the start, local investors encouraged small-scale experimentation and innovation. As a result, Worcester served as an incubator for many industries. Even today, it remains unsurpassed among mid-sized cities in America in the variety of goods produced.

Innovative spirit and product diversity are the hallmarks of Worcester's industrial legacy. Worcester Historical Society, 2019, http://www.worcesterhistory.org/worcesters-history/worcester-in-the-19th-century/industrialization/

Charles E. Staples (1821 – 1909)

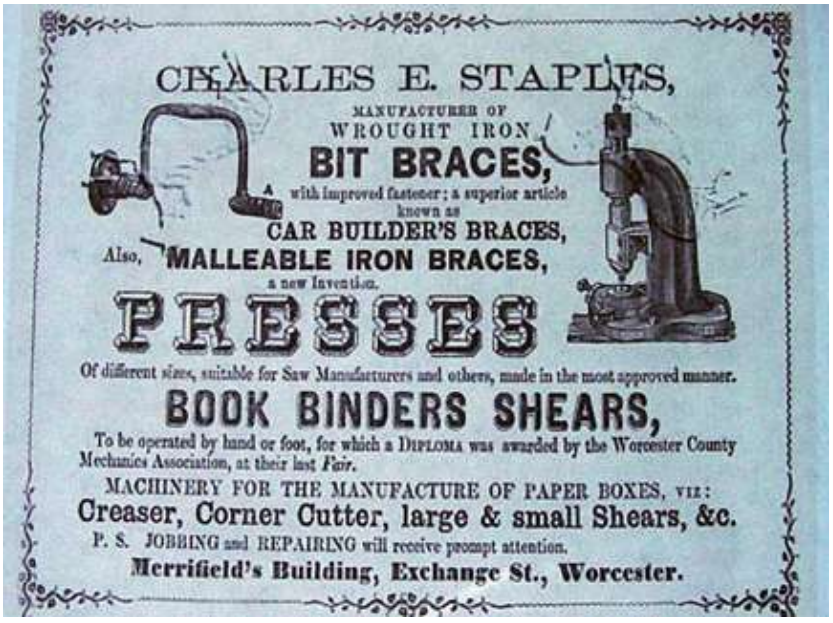
Charles Edwin Staples was born at Uxbridge, Massachusetts on February 14, 1821 and died on June 6, 1909 at 31 Lancaster Street, Worcester, Mass. Aged 88 years 3 months 23 days. He is buried at Hope Cemetery, Worcester, Mass.

Charles E. Staples married his first wife Mary Ann Metcalf (1822-1854) in Worcester on September 7, 1842 Mary Ann (Metcalf) Staples died in 1854 and is buried at Hope Cemetery, Worcester, Mass. The couple had a son, Edwin Metcalf Staples in 1847, but he was killed during the Civil War in 1865 – he was Private Edwin Metcalf Staples of the 2nd Regiment Massachusetts Heavy Artillery. He is buried at Hope Cemetery, Worcester, Mass.

Charles E. Staples married again, this time to Lois Amanda Scott (1827-1912). She is also buried in the family plot at Hope Cemetery, Worcester, Mass.

Three Staples are listed in the Worcester Directory of 1860:

1. The father Charles Staples (Senior)
   Staples Charles, machinist, h 4 School [49 Central
2. Charles Staples (Junior) – the son of Charles Staples (Senior) above
   Staples Charles E. manuf'r bitstocks, &c, Exch. H
3. An unknown relative
   Staples Samuel E. produce dealer, Foster, h 23


CHARLES E. STAPLES,
MANUFACTURER OF
WROUGHT IRON
BIT BRACES,
with improved fastener; a superior article known as
CAR BUILDER'S BRACES,
Also, MALLEABLE IRON BRACES,
a new Invention.
PRESSES
Of different sizes, suitable for Saw Manufacturers and others, made in the most approved manner.
BOOK BINDERS SHEARS,
To be operated by hand or foot, for which a DIPLOMA was awarded by the Worcester County Mechanics Association, at their last Fair.
MACHINERY FOR THE MANUFACTURE OF PAPER BOXES, VIZ:
Creaser, Corner Cutter, large & small Shears, &c.
P. S. JOBBING and REPAIRING will receive prompt attention.
Merrifield's Building, Exchange St., Worcester.

Charles Edwin Staples made "braces, clamps, bookbinders presses, and shears" in 1860. An undated advertisement shows his wrought iron bit braces "with improved fastener."

Also advertised are "Car Builder's Braces, Malleable Iron Braces, a new invention". Further products included "Presses of different sizes suitable for saw manufacturers

... Book Binders Shears ... machinery for the manufacture of Paper Boxes ..." The firm was in Merrifield's Building, Exchange St., Worcester, Massachusetts. (Source: sydnassloot)

The Merrifield buildings measured over eleven hundred feet in length, fifty feet in width, and three stories in height; the area of the floors was over four acres and a half; the power was obtained from a three hundred and fifty horse-power engine.

The Merrifield Buildings were burnt to the ground on June 14, 1854. The newspapers of the day (The National Aegis, June 21, 1854) reported that tenants lost $500,000 worth of property, and 1,000 men were thrown out of employ. The individual tenants were identified with Charles E. Staples suffering a $500 loss.

In 1859 Mr. Merrifield had leased rooms and power in his buildings to over fifty firms, each employing from two to eighty employees. Among them was Charles E. Staples, with seven hands, made bitstocks and window springs, and did light jobbing. (Washburn, Charles G. 1917, ***Industrial Worcester***, The Davis Press Worcester, p. 294 & 296).

Charles E. Staples probably had the manufacturing capacity to make more than 100 CCDs for Maranville, but Maranville may have restricted the first batch to 100 to see how well they sold to the public. It is highly probable, but not certain that Staples shipped the box of 100 Coin Testers back to Maranville in Clinton via the Ohio and Erie Canal system.

It is probable that later batches were also limited to 100 per production run and shipped from Worcester back to Clinton, Ohio via the Ohio and Erie Canal system. Surviving examples suggest that there were as many as six batches, which means that Staples perhaps made as many as 600 examples of Maranville's 1857 Coin Tester.

Harvey Maranville (1812-1889)

Harvey Maranville had trained as an engineer and arrived in Clinton, Ohio in the fall of 1833 just after the completion of the Ohio-Erie canal on October 15, 1832. He devoted his Winters to teaching and his Summers to the carpenter's trade, building many of the early bridges across the numerous streams in that vicinity; also, having studied civil engineering, devoting considerable time to surveying in that vicinity.

For many years, Maranville held the office of Justice of the Peace of Franklin township, acquiring an enviable reputation for the soundness of his judicial rulings and judgements.

Removing to Akron in 1861, he was appointed in 1863, under the United States Internal Revenue system, Inspector and Gauger of distilled and malt liquors and illuminating oils, for Summit County, holding the position for approximately 19 years.

Somewhere amid being a carpenter building bridges, a part time teacher, and carrying out his duties as Justice of the Peace of Franklin township, Harvey Maranville found the time to invent his 1857 Coin Tester and then arranged for Charles E. Staples to make it in Worcester, Massachusetts and ship it to Clinton, Ohio via the Ohio-Erie canal system in batches of 100.

Harvey Maranville clearly enjoyed an interesting and fulfilling life, and we are left with the ingenious coin testers he invented.

A detailed Pictorial Census of the 39 "known" surviving examples of Maranville's 1857 Coin Tester follows this article.

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1857 Maranville Coin Tester – Pictorial Census Record
This type of scale is also known as a Counterfeit Coin Detector (CCD)

All "known" examples of the 1857 Maranville Coin Tester are identified by numbers on both the back of the pan, and again on the back of the sliding beam.

No 4: Mike Foster Collection

The numbers are most likely identifiers marked during manufacture to identify "matching parts" for the pan and the beam. The matching was necessary to ensure that the coins balanced at the points marked on the sliding beam. If the coin tester did not balance after manufacture, there was probably some adjustment in the weight of the beam by filing the rounded end of the beam to suit. Once the required balance was achieved, the two parts were probably numbered with matching numbers to ensure they stayed together for later sale.

1857 Maranville CCDs identified (39 in total)
3, A3, 4, F4, 7, F8, 11, 11, 13, G16, T17, 18, 20? 25, B32, 33, 34, 39, 40, 42, 42, M46, 48, 48, 56, L58, 64, P64, R66, 67, V68, L70 (L98 on beam), 71, D79, 86, 88, 88, 93, D96

Fourteen 1857 Maranvilles are marked with an Alpha letter as well as a number.

A	B	C	D	E	F	G	H	I	J	K	L	M
3	**32**		**79, 96**		**4, 8**	**16**					**58, 70/98**	**46**
N	**O**	**P**	**Q**	**R**	**S**	**T**	**U**	**V**	**W**	**X**	**Y**	**Z**
		64		**66**		**17**		**68**				

The reason for these alpha letters is unknown, but they may relate to the personal initials of the workers employed by Staples in the Merrifield building in Worcester, Mass.

Some numbers are hand scribed (4) with a sharp pointed instrument, but the majority (35) have numbers imprinted using a number punch and hammer. All numbers fall within the range of 1 to 100, but there is evidence of repetition with some numbers.

1. some hand scribed (e.g.: 64) are repeated with punched examples (e.g.: P 64);
2. some punched above (e.g.: 88) are repeated with another punched below (e.g.: 88);
3. some punched above are simply repeated (e.g.: 11 and 11, 48 and 48);
4. some punched below are also simply repeated (e.g.: 42 and 42).

MHM ID#	Serial Number	Scribed Above	Punched Above	Punched Below	Alpha Below
1	**3**			**3**	
2	**A 3**				**A 3**
3	**4**		**4**		
4	**F 4**				**F 4**
5	**7**			**7**	
6	**F 8**				**F 8**
7	**11**		**11**		
8	**11**		**11**		
9	**13**	**13**			
10	**G 16**				**G 16**
11	**T 17**				**T 17**
12	**18**	**18**			
13	**20**		**20**		
14	**25**			**25**	
15	**B 32**				**B 32**
16	**33**	**33**			
17	**34**		**34**		
18	**39**		**39**		
19	**40**			**40**	
20	**42**			**42**	
21	**42**			**42**	
22	**M 46**				**M 46**
23	**48**		**48**		
24	**48**		**48**		
25	**56**		**56**		
26	**L 58**				**L 58**
27	**64**	**64**			
28	**P 64**				**P 64**
29	**R 66**				**R 66**
30	**67**		**67**		
31	**V 68**				**V 68**
32	**L 70 / L 98**				**L 70 / L 98**
33	**71**		**71**		
34	**D 79**				**D 79**
35	**86**			**86**	
36	**88**			**88**	
37	**88**		**88**		
38	**93**		**93**		
39	**D 96**				**D 96**
		Total = 4	Total = 13	Total = 8	Total = 14
Production	Runs?	1 x 100?	2 x 100	2 x 100	1 x 100

The repetition of some numbers and their location suggests there may have been as many as six production runs of 100 examples (6 x 100 = 600 total)

64 (Hand scribed) eBay 27.6.2019	P 64 Greg Parets Collection

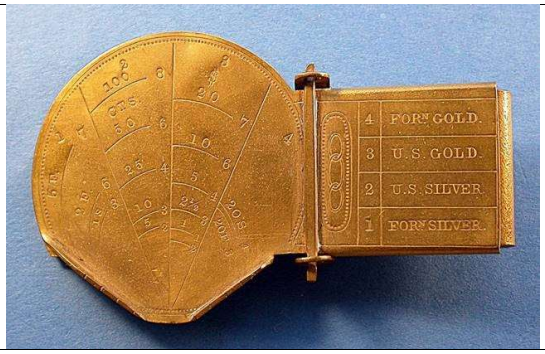
11 Eric Soslau Collection	11 Anonymous ISASC Member Collection

The above four different versions of numbering, combined with the duplication, suggests that there may have been six different production runs to replace stock depleted by ongoing sales. Each production run probably made 100 x 1857 Maranville Coin Testers for a possible total of 600 examples. There is no evidence of which production run was done first, second, third, fourth, fifth or sixth but the hand-scribed may have been first, and the "alpha" versions may have been last.

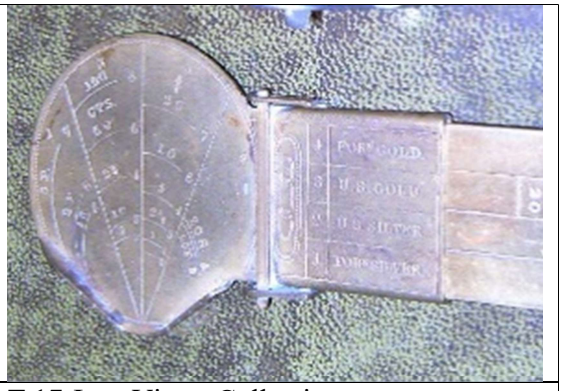
38 examples are “known” to have survived, suggesting a 6.33% survival rate over 162 years (1857 – 2019). Perhaps there are another 562 Maranville Coin Testers waiting to be found?

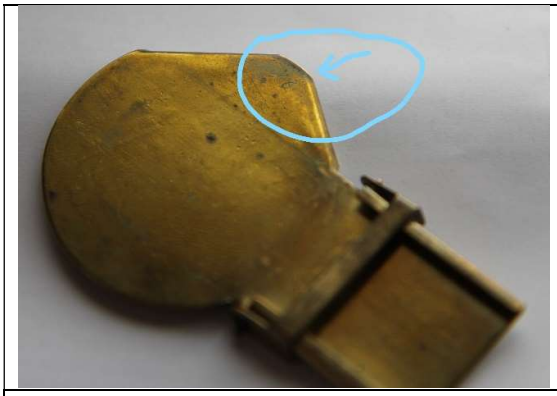
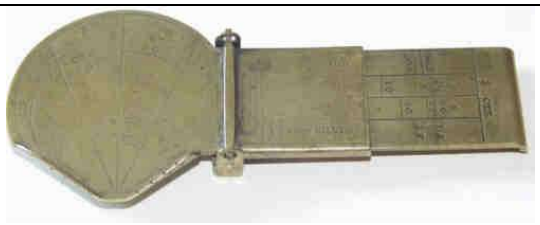
A 3 Dan Hamelberg Collection	A 3 Dan Hamelberg Collection
No Makers’ Names or Patent Date	Appears to be plated

3 Bill James Collection	3 Bill James Collection

	
4 Mike Foster Collection	4 Mike Foster Collection

F 4 ISASC Museum Collection	F 4 ISASC Museum Collection
7 Bill James Collection	7 Bill James Collection
F 8 Dan Hamelberg Collection	F 8 Dan Hamelberg Collection
11 Eric Soslau Collection	11 Eric Soslau Collection

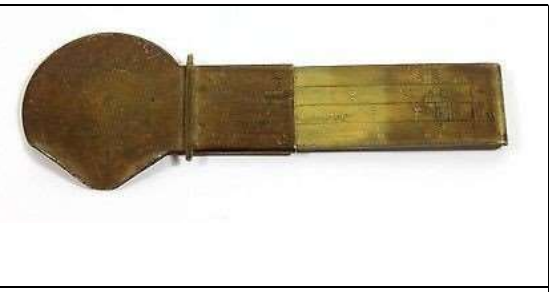
11 Anonymous ISASC Member Collection	11 Anonymous ISASC Member Collection
13 (Hand scribed) Bob Jibben Collection	13 (Hand scribed) Bob Jibben Collection
G 16 eBay / Worthopedia	G 16 eBay / Worthopedia
	
T 17 Jaap Visser Collection	T 17 Jaap Visser Collection

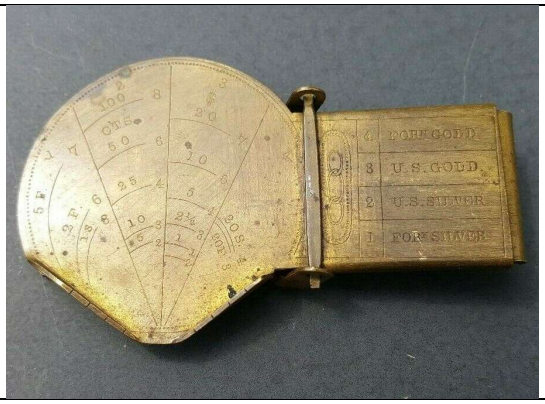
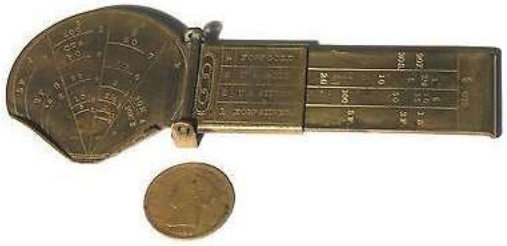
	
18 (hand scribed) David Roberts Collection	18 (hand scribed) David Roberts Collection
	
20 (23, 26, or 28?) Matthias Haas Collection	20 (23, 26, or 28?) Matthias Haas Collection
25 Erwin Brauer Collection	25 Erwin Brauer Collection
B 32 ISASC Member Collection	B 32 ISASC Member Collection

33 Hand scribed (2S on beam) Charles Ikins	33 Charles Ikins Collection
34 Larry Yerino Collection, Lafayette, LA	34 Larry Yerino Collection, Lafayette, LA
Found March 4, 2018 in 1870 Farmhouse Yard with a DEUS Metal Detector	Perhaps lost by a Union paymaster during the Battle of Bayou Bourbeau, Nov 3, 1863
39 Larry Press Collection	39 Larry Press Collection
40 Dan Hamelberg Collection	40 Dan Hamelberg Collection

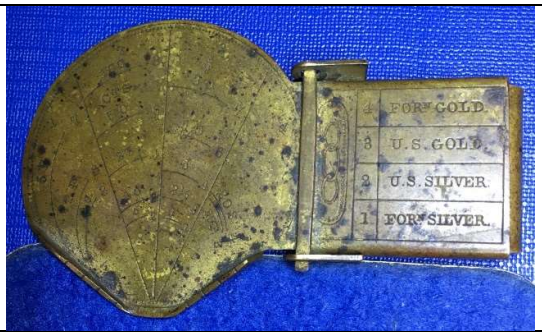
1857 Maranville Coin Tester by Malcolm H Mathias

42 Erwin Brauer Collection	42 Erwin Brauer Collection
42 ISASC Member Collection	42 ISASC Member Collection
46 Eclectic Numismatic Treasure Collection	46 Eclectic Numismatic Treasure Collection
48 Bob Hayden Collection	48 Bob Hayden Collection

48 Larry Press Collection	48 Larry Press Collection
56 Ebay May 2008	Missing Pivot Arm and Base
56 Stephen Barnett Collection	56 Stephen Barnett Collection
Pivot base made and replaced	Serial No on beam only
	
L 58 eBay / Worthopedia	Missing Pivot Base

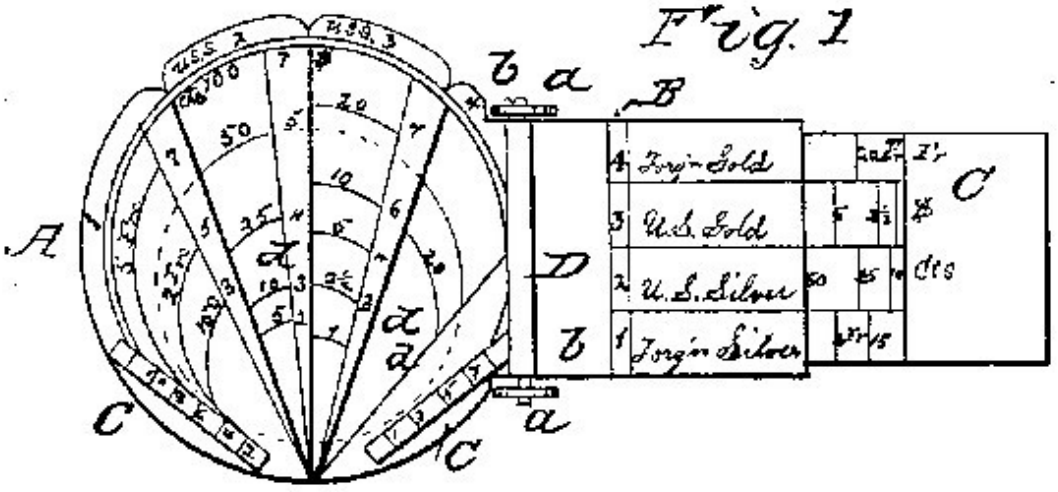
	
64 (Hand scribed) eBay 27.6.2019	eBay 27.6.2019 Sold for US $261
P 64 Greg Parets Collection	P 64 Greg Parets Collection
R 66 Stacks Auction House	R 66 Stacks Auction House
"Fewer than 20 known"	Photos Sept 19, 2013
	
67 eBay / Worthopedia	67 eBay / Worthopedia

V 68 Ken Thorn Collection	V 68 Ken Thorn Collection
L 70 on pan / L 98 on beam Greg Parets	L 70 / L 98 Greg Parets Collection
71 Larry Press Collection	71 Larry Press Collection
D 79 Jan Berning Collection	D 79 Jan Berning Collection
	No oval shapes on face at pivot/neck area

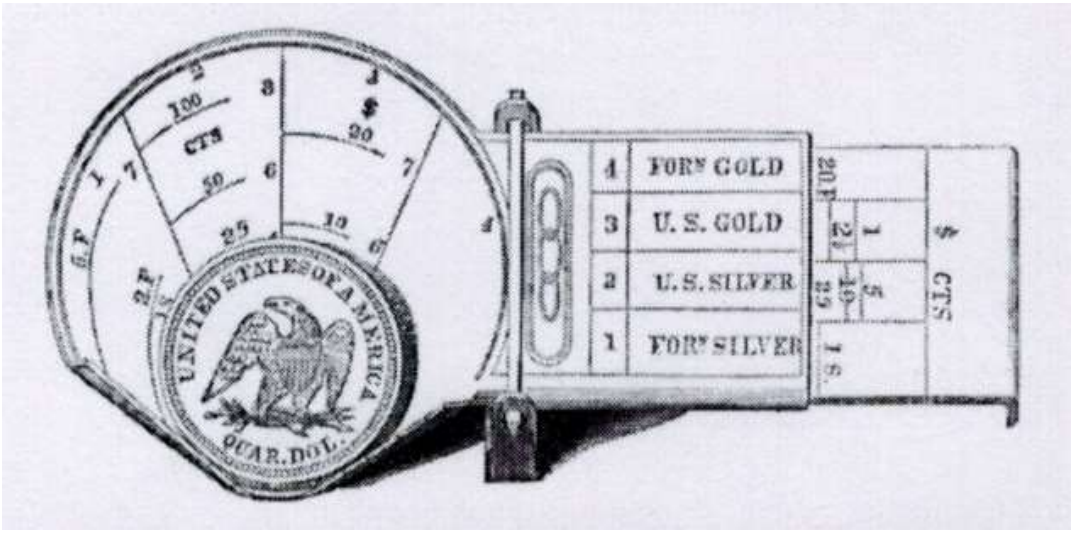
86 Greg Parets Collection	86 Greg Parets Collection
88 Richard Dewey Collection	88 Richard Dewey Collection
	
88 Malcolm Mathias Collection	88 Malcolm Mathias Collection
Found Taneytown, Maryland just a few miles south of the Battle of Gettysburg	Possibly dropped by a Union Paymaster during the Battle of Gettysburg.
93 eBay / Worthopedia	93 eBay / Worthopedia

96 D Larry Press Collection	96 D Larry Press Collection

An interesting comparison to conclude:



U.S.Patent Office. H.Maranville of Clinton, Ohio. Balance for detecting counterfeit coins. Specification of Letters Patent No. 16,390. Patented Jan: 13, 1857.



Scientific American, Volume XII, Number 50, August 22, 1857, page 1